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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/510,212	06/27/2005	Masayoshi Ishikawa	046124-5328	8665
9629	7590	03/03/2006	EXAMINER	
MORGAN LEWIS & BOCKIUS LLP 1111 PENNSYLVANIA AVENUE NW WASHINGTON, DC 20004			MIDKIFF, ANASTASIA	
			ART UNIT	PAPER NUMBER
			2882	

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Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/510,212	<b>Applicant(s)</b> ISHIKAWA ET AL.	
	<b>Examiner</b> Anastasia Midkiff	<b>Art Unit</b> 2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 June 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1, 5, 9, 13, 14 and 18 is/are allowed.
- 6) ☒ Claim(s) 10-12 and 15-17 is/are rejected.
- 7) ☒ Claim(s) 2-4 and 6-8 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 June 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date: _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>27 June 2005</u> .  | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Drawings***

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the second, third, and fourth extraction and rewritings means of claims 2-4 and 6-8 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

The disclosure is objected to because of the following informalities: There is no antecedence for the second, third, and fourth extraction and rewriting means of claims 2-4 and 6-8 in the specification.

Appropriate correction is required.

### ***Claim Objections***

Claims 2-4 and 6-8 are objected to because of the following informalities: The use of "second," "third," and "fourth," in reference to the storage, extraction, and rewriting means is misdescriptive because it implies a first, second, or third storage, extraction and rewriting means, as appropriate, wherein there is none in the claims as written. Examiner suggests changing the claim dependency to provide antecedence for the terms "second," "third," and "fourth," with respect to the storage means, and changing "second," "third," and "fourth," to --said-- with respect to the extraction and rewriting means.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

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only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 10-12 and 15-17 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent to Nakamura et al. (USP# 5,517,545).

With respect to Claims 10 and 15, Nakamura et al. teach an x-ray tube control apparatus, and the method for its use, comprising input means (290) to which a maximum voltage value of tube is input (Column 7, Lines 20-26), storage means (270) which stores a plurality of limit tube voltage control programs for stopping application of a tube voltage with a limit tube voltage value corresponding to a maximum tube voltage value of said tube as a threshold according to the maximum tube voltage values (Column 12, Lines 3-20), extraction means (280) which extracts one from said plurality of limit tube voltage control programs stored in said storage means which corresponds to the maximum tube voltage value input (Column 7, Lines 25-34), and output means (210) which outputs said limit tube voltage control program extracted by said extraction means (Column 12, Lines 16-20).

With respect to Claims 11 and 16, Nakamura et al. teach an x-ray tube control apparatus, and the method for its use, comprising input means (290) to which a maximum voltage value of tube is input (Column 7, Lines 20-26), storage means (270) which stores a plurality of limit tube current control programs for stopping application of a tube voltage with a limit tube current value corresponding to a maximum tube voltage value of said tube as a threshold according to the maximum tube voltage values (Column 12, Lines 3-20), extraction means (280) which extracts one from said plurality of limit tube current control programs stored in said storage means which corresponds

to the maximum tube voltage value input (Column 7, Lines 26-34), and output means (220) which outputs said limit tube current control program extracted by said extraction means (Column 7, Lines 48-51).

With respect to Claims 12 and 17, Nakamura et al. teach an x-ray tube control apparatus, and the method for its use, comprising input means (290) to which a maximum voltage value of tube is input (Column 7, Lines 20-26), storage means (270) which stores a plurality of focus lens control programs for minimizing a focal point when an electron beam hits a target of said tube with a maximum tube voltage value applied to target according to the maximum tube voltage values (Column 6, Lines 7-20), extraction means (280) which extracts one from said plurality of focus lens control programs stored in said storage means which corresponds to the maximum tube voltage value input (Column 7, Lines 26-34), and output means (40, 210) which outputs said focus lens control program extracted by said extraction means (Column 6, Lines 7-51).

Claims 10-12 and 15-17 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent Application Publication to Feda (2004/0247080).

With respect to Claims 10 and 15, Feda teaches an x-ray tube control apparatus, and the method for its use, comprising input means (101) to which a maximum voltage value of tube is input (Paragraph 59 Lines 15-21, and Paragraph 261), storage means (102, Paragraph 40 Lines 4-18) which stores a plurality of limit tube voltage control programs for stopping application of a tube voltage with a limit tube voltage value

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corresponding to a maximum tube voltage value of said tube as a threshold according to the maximum tube voltage values (Paragraph 53), extraction means (108) which extracts one from said plurality of limit tube voltage control programs stored in said storage means which corresponds to the maximum tube voltage value input (Paragraph 59), and output means (109) which outputs said limit tube voltage control program extracted by said extraction means (Paragraph 59).

With respect to Claims 11 and 16, Feda teaches an x-ray tube control apparatus, and the method for its use, comprising input means (101) to which a maximum voltage value of tube is input (Paragraph 59 Lines 15-21, and Paragraph 261), storage means (102, Paragraph 40 Lines 4-18) which stores a plurality of limit tube current control programs for stopping application of a tube voltage with a limit tube current value corresponding to a maximum tube voltage value of said tube as a threshold according to the maximum tube voltage values (Paragraph 53), extraction means (108) which extracts one from said plurality of limit tube current control programs stored in said storage means which corresponds to the maximum tube voltage value input (Paragraph 59), and output means (109) which outputs said limit tube current control program extracted by said extraction means (Paragraph 59).

With respect to Claims 12 and 17, Feda teaches an x-ray tube control apparatus, and the method for its use, comprising input means (101) to which a maximum voltage value of tube is input (Paragraph 59 Lines 15-21, and Paragraph 261), storage means (102, Paragraph 40 Lines 4-18) which stores a plurality of focus lens control programs for minimizing a focal point when an electron beam hits a target of said tube with a

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maximum tube voltage value applied to target according to the maximum tube voltage values (Paragraphs 52 and 53), extraction means (108) which extracts one from said plurality of focus lens control programs stored in said storage means which corresponds to the maximum tube voltage value input (Paragraph 59), and output means (109) which outputs said focus lens control program extracted by said extraction means (Paragraph 59).

***Allowable Subject Matter***

Claims 1, 5, 9, 13, 14, and 18 are allowed.

Claims 2-4 and 6-8 would be allowable if rewritten to overcome the objections set forth in this office action.

With respect to Claims 1-9 and 14, although prior art teaches many of the elements of the claimed invention, including storage, extraction, and rewriting means for controlling an x-ray tube voltage, current, and focal spot diameter, and the use of input steps, prior art fails to teach or fairly suggest an apparatus or method wherein the increase in voltage and/or current during tube warm-up is dependent upon the downtime of the tube in the manner required by claims 1-8.

With respect to Claims 13 and 18, although prior art teaches many of the elements of the claimed invention, including warming up programs for an x-ray tube, storage, extraction, and rewriting means for controlling an x-ray tube voltage, current, and focal spot diameter, and the use of input steps, prior art fails to teach or fairly suggest an apparatus or method wherein the input maximum value to storage means



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less than a programmed maximum voltage value and wherein storage means minimizes the difference between stored and input maximum voltage values to select the programmed value that is greater than the input value.


### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anastasia Midkiff whose telephone number is 571-272-5053. The examiner can normally be reached on M-F 7-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Glick can be reached on 571-272-2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ASM  
2/27/06

  
**EDWARD J. GLICK**  
**SUPERVISORY PATENT EXAMINER**

  
2/27/06